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# Nebraska Monthly Economic Indicators: August 17, 2012

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# Nebraska Monthly Economic Indicators: August 17, 2012

Prepared by the UNL College of Business Administration, Department of Economics

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**Summary:** *The Leading Economic Indicator – Nebraska (LEI-N) grew by 1.24% during July 2012. The increase in the LEI-N, which predicts economic growth in the state six months in the future, follows two months of decline. Improvement in the indicator during July confirms that the Nebraska economy will continue to grow in late 2012 and early 2013, though growth will be slow. A primary reason for the improvement in the LEI-N was a sharp drop in initial unemployment claims during July, which suggests stability in the Nebraska labor market. Building permits for single-family homes also rose during July, an improving signal for construction activity. A declining U.S. dollar in July also suggests growth in Nebraska export activity. Among other indicator components, manufacturing hours changed little between June and July while airline passenger counts dropped. There also was a decline in business expectations for sales and employment growth, according to the Survey of Nebraska Business. Pessimism among businesses, however, was at odds with progress in the labor and housing markets. This points to the importance of using current economic data as well as business survey results when developing expectations about the economy.*

## Leading Economic Indicator – Nebraska

Figure 1 shows the change in the Leading Economic Indicator – Nebraska (LEI-N) in July 2012, compared to the previous month. The LEI-N, which predicts economic growth six months into the future, rose by 1.24% in July, suggesting that the Nebraska economy will expand during late 2012 and early 2013.

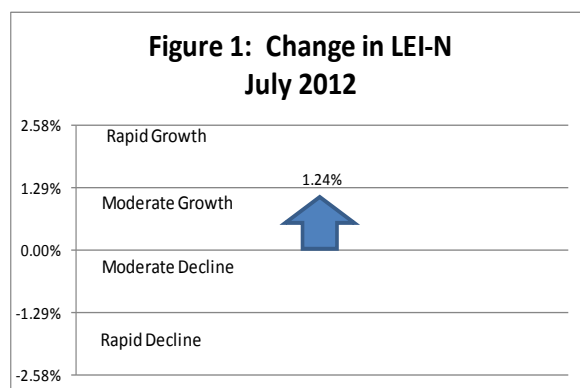


Figure 2 shows the growth in the LEI-N over the last 6 months. Rather than showing a steady increase, the LEI-N has alternated between decline and growth over the last six months. The indicator rose solidly in February and then again in July, but was down three of the four months between March and June. This pattern suggests that the Nebraska economy will expand this summer but growth will slow significantly during the fall. Improvement in the leading indicator in July, however, does confirm that the Nebraska economy will continue to expand late this year. In other words, Nebraska will avoid an outright contraction in late 2012 and early 2013.

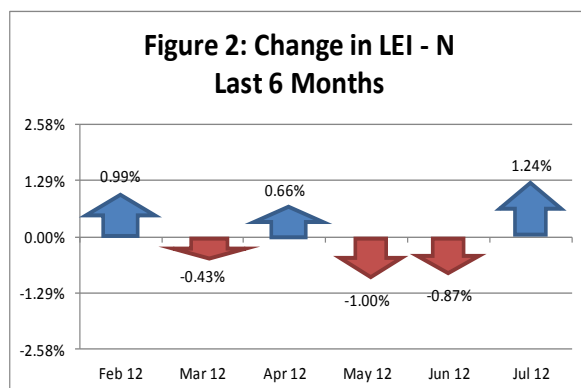
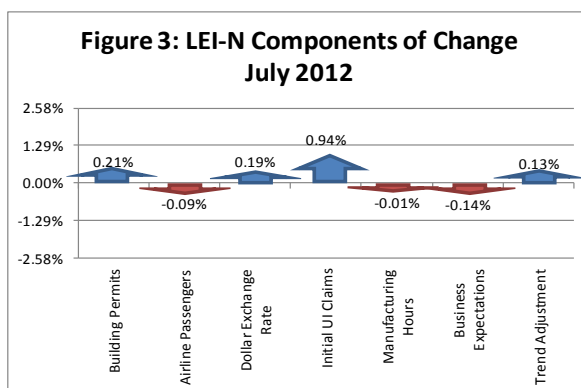
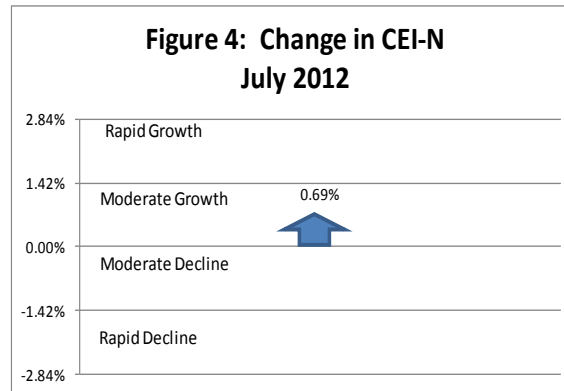


Figure 3 shows the components of change in the Leading Economic Indicator – Nebraska during July 2012. The change in the overall LEI – N is the weighted average of changes in each component (see page 5). Three components contributed to the increase in the LEI-N. The first factor was a sharp decrease in initial unemployment claims between June and July. Specifically, the number of claims moderated in July after peaking in June. The improvement in July suggests that the Nebraska labor market remains on solid footing. An increase in building permits for single-family homes also contributed to improvement in the LEI-N, as did a decline in the value of the U.S. dollar. A declining U.S. dollar will contribute to growth in export activity. These improvements in economic data were at odds with results from the monthly *Survey of Nebraska Business*. Respondents to the survey reported an expectation for a modest decline in sales and employment in their businesses over the next six months. Airline passenger counts also were down in July while manufacturing hours were largely unchanged between June and July. Note that the trend adjustment component pictured in Figure 3 is discussed on page 5.

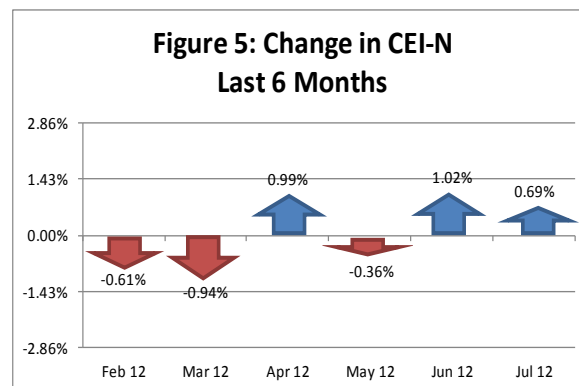


## Coincident Economic Indicator – Nebraska

The Coincident Economic Indicator - Nebraska (CEI-N) is a measure of the current size of the Nebraska economy. As seen in Figure 4, the CEI-N grew moderately, by 0.69%, between June and July of 2012.



As seen in Figure 5, the increase in the CEI-N during July is the second monthly increase in a row. These two monthly increases reflect a moderate expansion of the Nebraska economy during the summer months after weakness early in the year. Summer will be the key period for economic growth in the Nebraska economy during 2012.



As seen in Figure 6, rising private wages were the primary reason for the increase in the CEI-N during July. Real (inflation adjusted) private wages increased moderately in July, reflecting strength in private employment, hours, and real hourly wages. Agricultural commodity prices also rose in July, but the underlying patterns reflected the realities of Nebraska's drought. Specifically, crop prices rose while livestock prices fell as livestock producers liquidated portions of their herds in response to high feed costs. Adjusted electricity sales declined in July. Obviously, unadjusted electricity sales rose during the month given extreme summer weather, but there was a slight decline in electricity sales after adjusting for weather. Respondents to the *Survey of Nebraska Business* reported flat sales and employment activity in recent months. A detailed discussion of the components of the CEI-N, as well as the LEI-N, can be found at [www.cba.unl.edu](http://www.cba.unl.edu) in *Technical Report: Coincident and Leading Economic Indicators-Nebraska*.

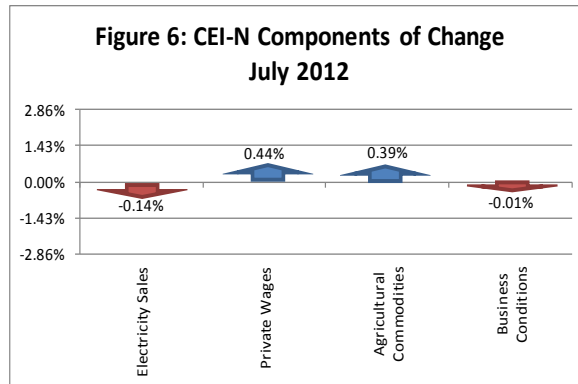
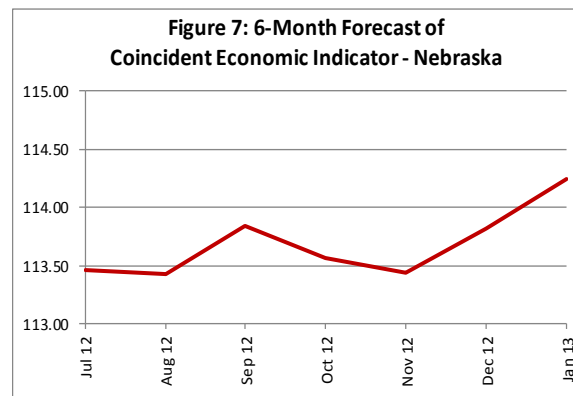


Figure 7 shows the forecast for the CEI-N over the next six months. The forecast reflects changes in the value of LEI-N between February and July of 2012 (see Figure 2). Recall that the LEI-N increased in February and then fell between March and June before increasing again in July. This pattern suggests continued improvement in the Nebraska economy during the summer but then a weak state economy in the fall. These expectations are depicted in Figure 7. The CEI-N is expected to rise through September before declining in the fall. The CEI-N will begin to recover again late in the year but will not reach its September 2012 peak until December. Growth will continue in January 2013.



## Weights and Component Shares

Table 1 shows the weights that were used to aggregate the individual components into the LEI-N and CEI-N. The weights are the inverse of the “standardized” standard deviation of each component variable. The term standardized simply means that the inverse standard deviations are adjusted proportionately to sum to 1. This weighting scheme makes sense since individual components that are more stable have smaller standard deviations, and therefore, a larger inverse standard deviation. A large movement in a typically stable economic series would provide a more powerful signal of economic change than a large movement in a series that regularly has large movements.

<b>Table 1: Component Weights for LEI-N and CEI-N</b>							
<b>Leading Economic Indicator - Nebraska</b>				<b>Coincident Economic Indicator - Nebraska</b>			
<b>Variable</b>	<b>Standard Deviation</b>	<b>Inverse STD</b>	<b>Weight (Inverse STD Standardize)</b>	<b>Variable</b>	<b>Standard Deviation</b>	<b>Inverse STD</b>	<b>Weight (Inverse STD Standardize)</b>
SF Housing Permits	14.4791	0.0691	0.0339	Electricity Sales	4.8746	0.2051	0.1743
Airline Passengers	3.6678	0.2726	0.1338	Private Wages	1.8287	0.5468	0.4645
Exchange Rate	1.2554	0.7966	0.3911	Agricultural Commodities	3.2843	0.3045	0.2586
Initial UI Claims	10.0156	0.0998	0.0490	Survey Business Conditions	8.2757	0.1208	0.1026
Manufacturing Hours	1.4584	0.6857	0.3366				
Survey Business Expectations	8.8351	0.1132	0.0556				

Tables 2 and 3 show the calculation for the change in CEI-N and LEI-N between June and July. Weights (from Table 1) are multiplied by the change to calculate the contribution of each component. Contributions are converted to percentage terms and summed. Note that in Table 2 a trend adjustment factor is utilized in calculating LEI-N. This is done because LEI-N historically under-predicts CEI-N by 0.13% per month. There is also a trend adjustment factor for the U.S. Leading Economic Indicator.

<b>Table 2: Component Contributions to the Change in Leading Economic Indicator</b>						
<b>Leading Economic Indicator - Nebraska</b>						
Component Index Value (May 2007=100)						
<b>Component</b>	<b>Current</b>	<b>Previous</b>	<b>Difference</b>	<b>Weight</b>	<b>Contribution</b>	<b>Percentage Contribution (Relative to Previous LEI-N)</b>
SF Building Permits	59.56	53.37	6.18	0.03	0.21	0.21%
Airline Passengers	90.48	91.19	-0.71	0.13	-0.09	-0.09%
U.S. Dollar Exchange Rate (Inverse)	102.83	102.34	0.49	0.39	0.19	0.19%
Initial Unemployment Insurance Claims (Inverse)	72.09	52.92	19.17	0.05	0.94	0.94%
Manufacturing Hours	87.46	87.47	-0.02	0.34	-0.01	-0.01%
Survey Business Expectations <sup>1</sup>	47.56		-2.44	0.06	-0.14	-0.14%
Trend Adjustment					0.13	0.13%
Total (weighted average)	101.23	99.99			1.24	1.24%

<sup>1</sup> Survey results are a diffusion Index, which is always compared to 50

<b>Table 3: Component Contributions to the Change in Coincident Economic Indicator</b>						
<b>Coincident Economic Indicator - Nebraska</b>						
Component Index Value (May 2007=100)						
<b>Component</b>	<b>Current</b>	<b>Previous</b>	<b>Difference</b>	<b>Weight</b>	<b>Contribution</b>	<b>Percentage Contribution (Relative to Previous CEI-N)</b>
Electricity Sales	112.32	113.20	-0.88	0.17	-0.15	-0.14%
Private Wage	94.98	93.92	1.06	0.46	0.49	0.44%
Agricultural Commodities	148.33	146.62	1.71	0.26	0.44	0.39%
Survey Business Conditions <sup>1</sup>	49.91		-0.09	0.10	-0.01	-0.01%
Total (weighted average)	113.46	112.69			0.77	0.69%

<sup>1</sup> Survey results are a diffusion Index, which is always compared to 50

## Performance of the LEI-N and CEI-N

Further information is available on both economic indicators to demonstrate how well the CEI-N tracks the Nebraska economy and how well the LEI-N leads the CEI-N. Figure 8 shows the value of CEI-N and the real gross state product (real GDP) in Nebraska for 2001 through 2011. The comparison ends in 2011 since this is the last year for which data on real gross state product is available. Annual real gross state product data is provided by the Bureau of Economic Analysis, U.S. Department of Commerce, and quarterly values were estimated using quarterly earnings data. CEI-N closely tracks Nebraska real GDP for the period. The correlation coefficient between the two pictured series is 0.94.

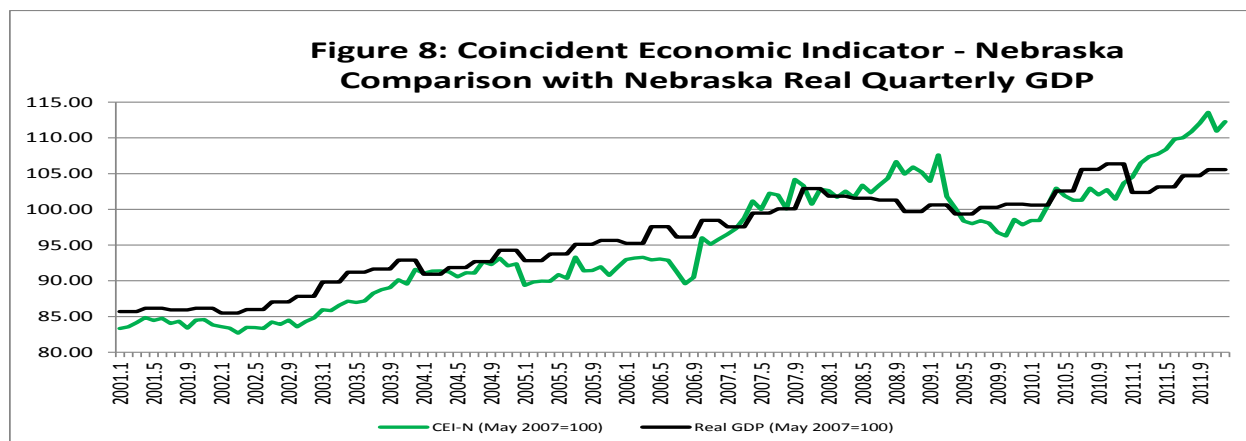


Figure 9 again shows the values for the CEI-N. It also graphs 6-months forward values for the LEI-N. Recall that the LEI-N is intended to forecast the Nebraska economy six months into the future. This implies that Figure 9 is comparing the predicted movement in CEI-N (predicted by LEI-N values six months earlier) with the actual movement in CEI-N. In Figure 9, predicted values using the LEI-N closely track trends and movement in the CEI-N. The correlation coefficient between CEI-N and six-month forward values of LEI-N is 0.91.

